CLAIMS

What is claimed is:

1. A system for rendering a display, comprising:

a drawing component that determines visible items to a display; and

a logic component that selectively defers layout of the visible items to the display in a just-in-time manner.

2. The system of claim 1, the logic component determines complexity of the visible items in order to defer the layout.

3. The system of claim 2, the logic component associates a flag with the visible items, the flag being true for complex items and the flag being false for non-complex items.

4. The system of claim 3, the complexity determined by a threshold number of subcomponents or children objects that are associated with the visible items.

5. The system of claim 1, further comprising a rough layout component to determine an approximation for the visible items.

6. The system of claim 1, further comprising a final layout component that renders the visible items to the display.

7. The system of claim 1, the visible items are associated with subcomponents or children elements appearing within the visible items.

8. The system of claim 5, the rough layout component performs a conceptual pass on the visible when a user interface object is constructed and added to a container.

9. The system of claim 8, the rough layout component is controlled by an implementor of a class.

10. The system of claim 8, the rough layout component determines property bounds of an object.

11. The system of claim 8, the rough layout component sets a "Layout Valid" property to false to inform a system that a layout is to be completed before an object is displayed.

12. The system of claim 6, the final layout component is a virtual function with a signature FinalLayout (ShapeF region).

13. The system of claim 12, the final layout component determines that an item is visible and finalizes an internal structure in preparation for a draw function.

14. The system of claim 13, further comprising a region submitted to the final layout component that is employed to selectively finalize layout on children elements.

15. The system of claim 1, drawing component is a virtual function having the signature Draw(Graphics g, ShapeF updateRegion.

16. The system of claim 15, further comprising a supplied region that indicates an area to be filled in.

17. The system of claim 16, further comprising a window that is partially revealed where the region is smaller than a total area of the window, the region employed for display optimization.

18. The system of claim 1, further comprising at least one application, the application including at least one of a user interface component, a CAD system, a software development system, a modeling system, a drawing system, and a diagrammatic system.

19. A computer readable medium having computer readable instructions stored thereon for implementing at least one of the components of claim 1.

20. A system for rendering items to a display, comprising:
means for processing a set of display items;
means for determining a complexity value for the display items; and
means for rendering the display items based in part on the complexity value.

21. A method to facilitate selective updating of a display, comprising:
determining a rough layout for a collection of information items;
tagging items from the collection for immediate display; and
selectively tagging remaining items from the collection for display at a later time.

22. The method of claim 21, further comprising providing a Final Layout function, a Layout Complete function, and a Draw function to render items to a display.

23. The method of claim 21, the Rough Layout is invoked is for components and subcomponent to be displayed, wherein an approximate representation of a size of individual the components and subcomponents is calculated.

24. The method of claim 21, further comprising determining a complexity parameter for the information items.

25. The method of claim 25, further comprising a child element rendering process, the process including at least one of:

1) translating a region into local coordinates;

2) determining which child elements are potentially required to draw;

3) checking a layout validity of the child elements;

4) invoking Final Layout on any item for which LayoutValid=>false; and

5) invoking a draw function on child elements which overlap an update region.

26. A graphical user interface, comprising:

at least one display object for displaying contents of an information item; and

at least one layout function that selectively renders the display object based upon a determined graphical complexity associated with the information item.